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|---|------|-----|----|-------------|----------------------------|
| FR 2772784 | A1 | | 26 | C10L-001/22 | |
| WO 9933938 | A1 F | | | C10L-001/18 | |
| Designated States (National): BR CA HU ID IN KR MK NO PL RU US | | | | | |
| Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE | | | | | |
| JP 11209766 | A | | 10 | C10L-001/18 | |
| NO 9904055 | A | | | C10L-000/00 | |
| EP 961820 | A1 F | | | C10L-001/18 | Based on patent WO 9933938 |
| Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI NL PT SE | | | | | |
| BR 9807728 | A | | | C10L-001/18 | Based on patent WO 9933938 |
| HU 200001251 | A2 | | | C10L-001/18 | Based on patent WO 9933938 |
| KR 2000071202 | A | | | C10L-001/18 | Based on patent WO 9933938 |

Abstract (Basic): FR 2772784-A1

NOVELTY - New additive formulations which restore the lubricating

properties of motor fuels depleted of sulfur and aromatics.

DETAILED DESCRIPTION - New oiliness additives for motor fuels,

particularly those of a S content lower than 500 ppm, which mainly

comprises 5 - 95% of a glycerol monoester IA or IB;

R1-(CO)-O-CH₂CHOH-CH₂OH (IA); R1-(CO)-O-CH(CH₂OH)₂ (IB);

R1=linear 8 - 24C alkyl or 8 - 60C cyclic or polycyclic; and 5 - 95% of a compound(II);

R2-(CO)-X(II)

R2=R1;

X=OR₀ (R₀ is 1 - 8C alkyl optionally substituted by hydroxyl and/or

ester) or primary or secondary amines, alkanolamines and/or 1 - 18C

polyamines.

INDEPENDENT CLAIMS are also included for the preparation of the

additives and fuel compositions containing the additives.

USE - The additive composition is used to improve the oiliness

characteristics of petrol, diesel and jet fuels, more particularly low

S diesel fuels.

ADVANTAGE - The composition acts as a replacement for S, aromatics

and polar compounds refined out of the fuels for reasons of pollution.

Loss of lubricating power results from depletion of these products.

The new additive compositions are compatible with other additives,
particularly detergents and lubricating oils, and do not form
deposits.

They are effective at low concentrations (less than 0.5%).

pp; 26 DwgNo 0/0

Derwent Class: E19; H06

International Patent Class (Main): C10L-000/00; C10L-001/18; C10L-001/22

International Patent Class (Additional): C10L-001/14; C10L-010/04

?s pn=fr 2772784

 S4 1 PN=FR 2772784

?s s4 not (s1 or s3

>>>Unmatched parentheses

?s s4 not (s1 or s3)

 1 S4

 1 S1

 1 S3

 S5 0 S4 NOT (S1 OR S3)

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Sub account: 005950-720

 \$15.34 0.652 DialUnits File351

 \$8.04 2 Type(s) in Format 7

 \$8.04 2 Types

 \$23.38 Estimated cost File351

 \$0.40 TELNET

 \$23.78 Estimated cost this search

 \$24.03 Estimated total session cost 0.709 DialUnits

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 2 AN=FR 9716538
 2 AN=FR 983225
 S2 2 AN=FR 9716538 + AN=FR 983225
 ?s s2 not s1
 2 S2
 1 S1
 S3 1 S2 NOT S1
 ?t 3/7

3/7/1
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WPI Acc No: 1999-397350/199934

New additive compositions for improving the lubricating power of low

sulfur petrol, diesel and jet fuels

Patent Assignee: ELF ANTAR FRANCE (ERAP); ELF ANTAR FRANCE SA (ERAP)

Inventor: EBER D; GERMANAUD L; MALDONADO P

Number of Countries: 031 Number of Patents: 008

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|---------------|------|----------|-------------|------|----------|-------|
| FR 2772784 | A1 | 19990625 | FR 983225 | A | 19980317 | 19993 |
| 4 B | | | | | | |
| WO 9933938 | A1 | 19990708 | WO 98FR2823 | A | 19981222 | 19993 |
| 4 | | | | | | |
| JP 11209766 | A | 19990803 | JP 98202357 | A | 19980716 | 19994 |
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| NO 9904055 | A | 19991020 | WO 98FR2823 | A | 19981222 | 20000 |
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| | | | NO 994055 | A | 19990823 | |
| EP 961820 | A1 | 19991208 | EP 98963589 | A | 19981222 | 20000 |
| 2 | | | | | | |
| BR 9807728 | A | 20000215 | WO 98FR2823 | A | 19981222 | 20002 |
| 4 | | | BR 987728 | A | 19981222 | |
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| HU 200001251 | A2 | 20000828 | WO 98FR2823 | A | 19981222 | 20005 |
| 5 | | | | | | |
| | | | HU 20001251 | A | 19981222 | |
| KR 2000071202 | A | 20001125 | WO 98FR2823 | A | 19981222 | 20013 |
| 1 | | | | | | |
| | | | KR 99707492 | A | 19990818 | |

Priority Applications (No Type Date): FR 9716538 A 19971224
 Patent Details:

1/2 WPAM - (C) Derwent- image

AN - 1999-397350 [34]

XR - 1999-397349

XA - C1999-117060

TI - New additive compositions for improving the lubricating power of low sulfur petrol, diesel and jet fuels

DC - E19 H06

PA - (ERAP) ELF ANTAR FRANCE SA

- (ERAP) ELF ANTAR FRANCE

IN - EBER D; GERMANAUD L; MALDONADO P

NP - 5

NC - 31

PN - **FR2772784** A1 19990625 DW1999-34 C10L-001/22 26p *

AP: 1998FR-0003225 19980317

- **WO9933938** A1 19990708 DW1999-34 C10L-001/18 Fre

AP: 1998WO-FR02823 19981222

DSNW: BR CA HU ID IN KR MK NO PL RU US

DSRW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

- **JP11209766** A 19990803 DW1999-41 C10L-001/18 10p

AP: 1998JP-0202357 19980716

- **NO9904055** A 19991020 DW2000-01 C10L-000/00

AP: 1998WO-FR02823 19981222; 1999NO-0004055 19990823

- **EP-961820** A1 19991208 DW2000-02 C10L-001/18 Fre

FD: Based on WO9933938

AP: 1998EP-0963589 19981222; 1998WO-FR02823 19981222

DSR: AT BE CH DE DK ES FI FR GB GR IE IT LI NL PT SE

PR - 1997FR-0016538 19971224

AB - **FR2772784** A

NOVELTY - New additive formulations which restore the lubricating properties of motor fuels depleted of sulfur and aromatics.

- DETAILED DESCRIPTION - New oiliness additives for motor fuels, particularly those of a S content lower than 500 ppm, which mainly comprises 5 - 95% of a glycerol monoester IA or IB;

- R1 - (CO) -O-CH₂CHOH-CH₂OH (IA); R1 - (CO) -O-CH(CH₂OH)₂ (IB);

- R1 = linear 8 - 24C alkyl or 8 - 60C cyclic or polycyclic;

- and 5 - 95% of a compound(II);

- R2 - (CO) -X(II)

- R2 = R1;

- X = ORO (R0 is 1 - 8C alkyl optionally substituted by hydroxyl and/or ester) or primary or secondary amines, alkanolamines and/or 1 - 18C polyamines.

- INDEPENDENT CLAIMS are also included for the preparation of the additives and fuel compositions containing the additives.

- USE - The additive composition is used to improve the oiliness characteristics of petrol, diesel and jet fuels, more particularly low S diesel fuels.

- ADVANTAGE - The composition acts as a replacement fro S, aromatics and polar compounds refined out of the fuels for reasons of pollution. Loss of lubricatiing power results from depletion of these products. The new additive compositions are compatible with other additives, particularly detergents and lubricating oils, and do not form deposits. They are effective at low concentrations (less than 0.5%). (Dwg.0/0)

TF - TECHNOLOGY FOCUS

- ORGANIC CHEMISTRY - Preferred Mixture: The additive mixture comprises at least 70% of the combination described above, of which 10 - 40% is IA and/or IB and 60 - 90% is a compound II. The composition also contains up to 30% (more preferably 5 - 20%)of a di-ester IIIA and/or IIIB; R3 - (CO) -O-CH₂-CHOH-CH₂-O-(CO) -R4 (IIIA); R3 - (CO) -O-CH₂-CH(CH₂OH) -O- (CO) -R4 (IIIB);

- R3 and R4 (identical or different) = as defined for R1 and R2.
- The esters of formula I are derived from lauric, palmitic, linoleic, linolenic or ricinoleic acids; or from polycyclic acids of at least two 5 - 6 atom rings with no more than one heteroatom (N or O), preferably vicinal and optionally unsaturated. These are preferably resin acids from esters of abietic, dihydro-, tetrahydro- and dehydro-abietic acids, neoabietic, pimaric, levopimaric and parastrinic acids. The esters and amides of II are obtained by reaction of an alcohol, polyol, amine, polyamine and/or alkanolamine with an acid such as oleic or methyl oleate.
- Preferred Preparation: The preferred preparation consists of reacting a mono- or polyalcohol, alkanolamine, primary or secondary amine or polyamine with a triglyceride (IV) in a molar ratio 0.1 - 3 (more preferably 1.5 - 2.5);
- R11, R12, R13 (identical or different) = 8 - 24C alkyl, optionally unsaturated.
- The reaction is effected at ambient to 250degreesC (more preferably 80 - 200degreesC) for 0.5 - 10 hours (more preferably 2 - 4 hours) under atmospheric pressure and in the presence of 25 - 75% of a solvent chosen from xylene, ethylbenzene or an aromatic cut distilling between 190 - 209degreesC. The triglycerides are derived from vegetable and animal sources particularly maize, colza, tournesol, soya and ricin. The mono-alcohol is chosen from MeOH up to 2-ethylhexanol, and/or oxyalkylated alcohols such as methyl cellusolve.
- R(O-CH2-CHR1)nOH;
- R = 1 - 6C alkyl;
- R1 = 1 - 4C alkyl;
- n = 1 - 4.
- The polyol is chosen from ethylene glycol, diethylene glycol and 13 other compounds. The primary or secondary amine is chosen from ethylene diamine, N,N-diethylamine and 15 other compounds. The polyamine is chosen from ethylene diamine, propylene diamine and 7 other compounds and including polymers resulting from hydrogenation of addition products of a 8 - 18C fatty amine with acrylonitrile, e.g. N-oleylpropanediamine. The alkanolamines are chosen from 1 - 18C amines substituted by hydroxymethyl, hydroxyethyl or hydroxypropyl such as ethanolamine, diethanolamine and 9 other compounds.
- The preferred reaction product comprises: 5 - 25% wt. of IA and/or IB; 35 - 75% wt. of II; 0.1 - 20% wt. of IIIA and/or IIIB; and a residue of unreacted triglyceride IV.

2/2 WPAM - (C) Derwent- image
 AN - 1999-397349 [34]
 XR - 1999-397350
 XA - C1999-117059
 TI - New additives compositions for improving the lubricating power of low sulfur petrol, diesel and jet fuels
 DC - E19 H06
 PA - (ERAP) ELF ANTAR FRANCE SA
 - (ERAP) ELF ANTAR FRANCE
 IN - EBER D; GERMANAUD L; MALDONADO P
 NP - 3
 NC - 3
 PN - FR2772783 A1 19990625 DW1999-34 C10L-001/22 26p *
 AP: 1997FR-0016538 19971224
 - JP11209766 A 19990803 DW1999-41 C10L-001/18 10p
 AP: 1998JP-0202357 19980716
 - NO9904055 A 19991020 DW2000-01 C10L-000/00
 AP: 1998WO-FR02823 19981222; 1999NO-0004055 19990823
 PR - 1997FR-0016538 19971224; 1998FR-0003225 19980317
 AB - FR2772783 A

NOVELTY - New additive formulations which restore the lubricating properties of motor fuels depleted of sulfur and aromatic compounds.

- DETAILED DESCRIPTION - New oiliness additives for motor fuels, particularly those with a S content less than 500 ppm, which mainly comprises 5 - 95% of a glycerol monoester 1A or 1B;
- R1 - (CO) - O - CH₂CHOH - CH₂OH (IA);
- R1 - (CO) - O - CH(CH₂OH)₂ (IB);
- R1 = linear 8 - 24C alkyl (optionally unsaturated) or cyclic or polycyclic 8 - 60C alkyl
- and 5 - 95% of a compound (II);
- R2 - (CO) - X ; (II)
- R2 = linear 8 - 24C alkyl (optionally unsaturated) or cyclic or polycyclic 8 - 60C alkyl;
- X = 1 - 8C mono- or polyalcohol ester, or 1 - 18C primary or secondary amine, aliphatic alkanolamines and polyamines.
- INDEPENDENT CLAIMS are also included for the preparation of the additive and fuel compositions containing these additives.
- USE - The additive composition is used to improve the oiliness characteristics of petrol, diesel and jet fuels, more particularly low sulfur diesel fuels.
- ADVANTAGE - The composition acts as a replacement for sulfur compounds, aromatics and polar compounds refined out of fuels for reasons of pollution. Loss of lubricating properties results from depletion of these products. The new additive compositions are compatible with other additives (particularly detergents and lubricating oils) and are effective at low concentrations (less than 0.5%). (Dwg.0/0)

TF - TECHNOLOGY FOCUS

- ORGANIC CHEMISTRY - Preferred Mixture: The preferred additive mixture comprises at least 70% of the combination above, of which 10 - 40% is IA and/or IB and 60 - 90% is a compound II. The composition also contains up to 30% (more preferably 5 - 20%) of a di-ester IIIA and/or IIIB; R3 - (CO) - O - CH₂ - CHOH - CH₂ - O - (CO) - R4 (IIIA); R3 - (CO) - O - CH₂ - CH(CH₂OH) - O - (CO) - R4 (IIIB);
- R3, R4 (identical or different) = as R1 and R2.
- The ester of formula (I) are derived from lauric, palmitic, linoleic, linolenic or ricinoleic acids; or polycyclic acids with at least two 5 - 6 atom rings and no more than one heteroatom (N or O), the rings preferably vicinal and optionally unsaturated. These are obtained from natural resin acids, preferably abietic, dihydro-, tetrahydro- and dehydro-abietics, neoabietic, pimaric, levopimaric and parastrinic acids. The esters and amides of formula (II) are obtained by reaction of an alcohol, polyol, amine, polyamine and/or alkanolamine with an acid such as oleic or methyl oleate.
- Preferred Preparation: The preferred preparation consists of reacting a mono- or polyalcohol, alkanolamine, primary or secondary amine or polyamine with a triglyceride (IV) in a molar ratio 0.1 - 3 (more preferably 1.5 - 2.5 moles/mole of triglyceride);
- R11, R12 and R13 (identical or different) = 8 - 24C alkyl (optionally unsaturated).
- The reaction is effected at ambient to 250degreesC (more preferably 80 - 200degreesC) for 0.5 - 10 hours (more preferably 2 - 4 hours) under atmospheric pressure and in the presence of 25 - 75% of a solvent (a xylene or ethylbenzene or an aromatic cut of 190 - 209degreesC). The triglycerides are derived from vegetable or animal sources particularly maize, colza, tournesol, soya and ricins. The mono-alcohols are selected from MeOH up to 2-ethyl hexanol, and /or oxyalkylated alcohols such as methyl cellosolve.
- R(O-CH₂-CHR1)_n-OH;
- R = 1 - 6C alkyl;
- R1 = 1 - 4C alkyl;

- n = 1 - 4.
- The polyol is selected from ethylene glycol, diethylene glycol and 13 other compounds; the primary or secondary amine are chosen from methylamine, N,N-diethylamine and 7 other compounds, including polymers resulting from hydrogenation of addition products of a 8 - 18C fatty amine with acrylonitrile, e.g. N-oleylpropanediamine; the alkanolamines are chosen from 1 - 18C amines substituted by hydroxymethyl, hydroxyethyl or hydroxypropyl such as ethanolamine, diethanolamine and 9 other compounds.
- The preferred reaction product comprises: 5 - 25% wt. of IA and/or IB; 20 - 60% wt. of II ; 0.1 - 20% wt. of IIIA and/or IIIB; and a residue of triglyceride IV.
- Preferred fuel compositions of low S content contain 25 - 2500 ppm (more preferably 100 - 1000 ppm) of an additive mixture as defined above, including petrols defined by ASTM D-439 (optionally containing an oxygenated compound) and diesels, defined by ASTM D-975.